

## CLAIMS

What is claimed is:

1. A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:
  - providing a tubular member sized for communication with an analytical device;
  - coating an interior surface of said tubular member with a sorptive coating;
  - injecting said analyte-bearing sample into said coated tubular member;
  - sorptively extracting said at least one analyte from said analyte-bearing sample;
  - removing said analyte bearing sample from said coated tubular member;
  - desorbing said analyte from said coated tubular member; and
  - introducing said desorbed analyte into said analytical device.
2. The method of claim 1, wherein:
  - said analytical device is a gas chromatograph;
  - said gas chromatograph having an injection port housing;
  - said injection port housing receiving said tubular member therein.
3. The method of claim 1, wherein said sorptive coating comprises at least one selection from the group consisting of:
  - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
  - (b) a porous layer;
  - (c) other immobilized polymers above their glass transition temperature;
  - (d) an immobilized porous polymer;
  - (e) a sol gel; and
  - (f) an immobilized adsorbent.
4. The method of claim 3, wherein:
  - said injection step includes connecting said coated tubular member to a vessel;
  - said vessel containing said analyte-bearing sample; and
  - said removing step includes separating said coated tubular member from said vessel.
5. The method of claim 3, wherein:

said analytical device is a gas chromatograph;  
said gas chromatograph having an injection port housing;  
said injection port housing receiving said tubular member therein.

6. A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:

providing a tubular member sized for communication with an analytical device;  
coating an interior surface of said tubular member with a sorptive coating;  
said sorptive coating comprising at least one selection from the group consisting of:

- (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent;

injecting said analyte-bearing sample into said coated tubular member;  
sorptively extracting said at least one analyte from said analyte-bearing sample;  
removing said analyte bearing sample from said coated tubular member;  
desorbing said analyte from said coated tubular member;  
introducing said desorbed analyte into said analytical device;  
said analytical device is a gas chromatograph;  
said gas chromatograph having an injection port housing; and  
said injection port housing receiving said tubular member therein.

7. A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;  
said passageway providing fluid communication from said inlet to said outlet;  
said passageway defined by an interior surface;  
said interior surface coated with a sorptive coating; and

said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

(b) a porous layer;

(c) other immobilized polymers above their glass transition temperature;

(d) an immobilized porous polymer;

(e) a sol gel; and

(f) an immobilized adsorbent.

8. The device in claim 7, further comprising:

said interior surface having a uniformly smooth surface.

9. The device in claim 7, further comprising:

said interior surface having an irregular surface.

10. The device of claim 7, wherein:

said tubular member is received into the injection port housing of a gas chromatograph.

11. A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;

said passageway providing fluid communication from said inlet to said outlet;

said passageway defined by an interior surface;

said interior surface having a uniformly smooth surface;

said interior surface coated with a sorptive coating; and

said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

12. A tubular member for performing extraction and desorption, said tubular member comprising:

- an inlet, an outlet, and a passageway therethrough;
- said passageway providing fluid communication from said inlet to said outlet;
- said passageway defined by an interior surface;
- said interior surface having an irregular surface;
- said interior surface coated with a sorptive coating; and
- said sorptive coating comprises at least one selection from the group consisting of:
  - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
  - (b) a porous layer;
  - (c) other immobilized polymers above their glass transition temperature;
  - (d) an immobilized porous polymer;
  - (e) a sol gel; and
  - (f) an immobilized adsorbent.